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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,214	05/08/2001	Guido Voit	48839DIV	4235
26474	7590	04/22/2004	EXAMINER	
KEIL & WEINKAUF 1350 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			SACKEY, EBENEZER O	
			ART UNIT	PAPER NUMBER
			1626	

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/851,214

Applicant(s)

VOIT ET AL.

Examiner

EBENEZER SACKKEY

Art Unit

1626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 11 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-48 is/are pending in the application.
- 4a) Of the above claim(s) 41-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### **Status of Claims**

Claims 21-48 are pending.

This is in response to the appeal brief filed on 2/11/04.

In an appeal conference, it was decided in view of the new evidence, which will be made of record, the finality of rejection of the office action dated 09/05/03 of claims 21-40 is hereby withdrawn.

Applicants' brief is treated as a response to the now, non-final rejection dated 09/05/03. In view of the evidence newly made of record, the rejection of claims 21-40 over Dewdney et al., (I) and (II) and Flick et al., is moot in view of the new ground of rejection.

### **Claim Rejections - 35 U.S.C. § 103**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 21-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dewdney et al., (U.S. Patent number 4,064,172) in view of Lee et al., Hydrogenation of Carbon Dioxide on Iron Catalysts Doubly Promoted with Manganese and Potassium "Canadian Journal of Chemical Engineering", (1992), 70(3), pp. 511-515 and Nam et al., Catalytic Conversion of Carbon dioxide into hydrocarbons over Zinc promoted Iron Catalysts, "Energy Conversion And Management" (1997), 38(Suppl., Proceedings of the Third International Conference on Carbon Dioxide Removal", (1996), S397-S402.

Applicants claim a hydrogenation catalyst comprising, as catalytically effective component, a composition consisting of (a) iron or a compound based on iron or a mixture thereof, (b) from 0.001 to 0.3% by weight based on (a) of a promoter based on 2, 3, 4 or 5 elements selected from the group consisting of aluminum, silicon, zirconium, titanium and vanadium, (c) from 0 to 0.3% by weight based on (a) of a compound based on an alkali and/or alkaline earth metal, and (d) from 0.001 to 1% by weight based on (a) of manganese.

**Determination of the scope and content of the prior art (MPEP §2141.01)**

Dewdney et al., '172' teach iron catalysts and to their use in hydrogenation reactions, especially in the hydrogenation of organic compounds, and particularly of nitriles. See

column 1, lines 9-15, column 2, lines 14-30, lines 56-57, and especially column 6, comparative example 2, which discloses various iron content, alumina, silica, calcium oxide and vanadium pentaoxide. .

**Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)**

The instant catalyst of Dewdney's composition is silent about the manganese content. However, Lee et al., and Nam et al., teach that promoter oxide catalyst in manganese would offer stability and selectivity. See the attached abstracts to the two references.

**Finding of prima facie obviousness---rational and motivation (MPEP §2142-2143)**

Thus, one of ordinary skill in the art would thus have been motivated to prepare hydrogenation catalysts composition of Dewdney et al., as modified by the suggestion of Lee and Nam that better stability and selectivity would be expected. In the absence of unexpected results, the use of convention mixture for its expected merits is prima facie obvious.

**Claim Rejections - 35 U.S.C. § 103**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 21-22, 27, 34, 35, are rejected under 35 U.S.C. 103(a) as being unpatentable over Dewdney et al., (U.S. Patent number 4,064,172) in view of Ansmann et al., (DE 10151559).

Applicants claim a hydrogenation catalyst comprising, as catalytically effective component, a composition consisting of (a) iron or a compound based on iron or a mixture thereof, (b) from 0.001 to 0.3% by weight based on (a) of a promoter based on 2, 3, 4 or 5 elements selected from the group consisting of aluminum, silicon, zirconium, titanium and vanadium, (c) from 0 to 0.3% by weight based on (a) of a compound based on an alkali and/or alkaline earth metal, and (d) from 0.001 to 1% by weight based on (a) of manganese.

**Determination of the scope and content of the prior art (MPEP §2141.01)**

Dewdney et al., '172' teach iron catalyst composition prepared from magnetite ore.

Ansmann et al., prepared similar catalyst composition from magnetite ore analyzed the content to convey that manganese is part of the core element of the ore.

**Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)**

The instant catalyst of Dewdney's composition is silent about the manganese content. However, DE '559' evidenced that manganese in magnetite ore is innate nature of the material. The DE reference was published after the filing of the instant reference. However, MPEP chapter 2100, subsection 2124 reads, "in certain circumstances, references cited to show a universal fact need not be available as prior art before applicants filing date. *In re Wilson*, 311 F.2d 266, 135 USPQ 442 (CCPA 1962). Such facts include the characteristics and properties of a material or a scientific truism".

**Finding of prima facie obviousness---rational and motivation (MPEP §2142-2143)**

Thus, one of ordinary skill in the art in possession of the Dewdney reference is in possession of the claims because DE '559' provides evidence that manganese is innately in Dewdney's preparation.

**Claim Rejections - 35 U.S.C. § 103**

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 21, 27, 28-33, 38, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dewdney et al., (U.S. Patent number 3,986,985) in view of Onsager et al., (U.S. Patent number 3,644,477).

Applicants claim a hydrogenation catalyst comprising, as catalytically effective component, a composition consisting of (a) iron or a compound based on iron or a mixture thereof, (b) from 0.001 to 0.3% by weight based on (a) of a promoter based on 2, 3, 4 or 5 elements selected from the group consisting of aluminum, silicon, zirconium, titanium and vanadium, (c) from 0 to 0.3% by weight based on (a) of a compound based on an alkali and/or alkaline earth metal, and (d) from 0.001 to 1% by weight based on (a) of manganese.

**Determination of the scope and content of the prior art (MPEP §2141.01)**

Dewdney et al., '172' teach iron catalysts and to their use in hydrogenation reactions, instead of manganese. See column 1, lines 8-12, column 2, lines 25-27, lines 52-53, and especially column 6, comparative example 2, which discloses various iron content, alumina, silica, calcium oxide and vanadium pentaoxide. Onsager taught promoter salt of vanadium, manganese is optional choice. Nam and Lee suggested manganese provides selectivity and stability.



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**Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)**

The instant catalyst of Dewdney et al., composition is silent about the manganese content.

**Finding of prima facie obviousness---rational and motivation (MPEP §2142-2143)**

Therefore, one of ordinary skill in the art would be motivated to choose ore content salt taught by Onsager and suggested by Lee and Nam. One would expect to choose manganese for its stability and selectivity.

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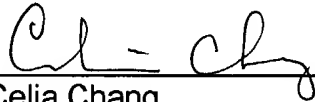
Any inquiry concerning this communication or earlier communications from the examiner should be directed to E. Sackey whose telephone number is (703) 305-6889.

The examiner can normally be reached on Monday-Friday from 7:30 am to 4:30 pm.

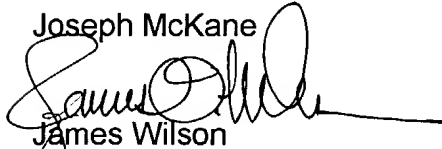
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane, can be reached on (703) 308-4537. The fax phone number for this Group is (703) 308-4556.

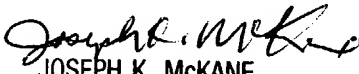
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1235.

EOS  
April 20, 2004

  
Celia Chang  
Patent Examiner  
Group 1600  
Technology Center 1

Conferees

Joseph McKane  
  
James Wilson  
JAMES O. WILSON  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600

  
JOSEPH K. MCKANE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600